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## CURRENT PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES<sup>1</sup>

September 8–October 5, 1935

*Poliomyelitis.*—The number of cases of poliomyelitis dropped from 3,625 for the 4 weeks ended September 7 to 2,528 for the current 4-week period. While the number of weekly cases fluctuated considerably in the areas which have shown the greatest prevalence, it is evident that the disease is on the decline in all sections of the country. Later reports (week ended October 12) indicate a further decline. As compared with recent years the current incidence for the country as a whole was about two and one-half times that for the corresponding period of last year and more than double the incidence in 1933.

Poliomyelitis has been most prevalent in the regions along the Atlantic coast and, while it is on the decline, the numbers of cases in those regions are considerably in excess of those of recent years. In the New England and Middle Atlantic regions the incidence dropped about 50 percent below that for the preceding 4 weeks, but the number of cases (1,805) was almost 18 times that for the corresponding period of last year, and about 3 times the number in 1933 and 1932; it did not reach the 1931 level of 2,562 cases, however. The South Atlantic States continued to report a rather high incidence (166 cases as compared with 49 last year), and the incidence was somewhat above the seasonal expectancy in some States in the East North Central and South Central regions. In the Mountain and Pacific regions the number of cases was only about 20 percent of last year's figures for this period, but it was slightly above that for each of the 3 preceding years. The West North Central States reported about the normal incidence for this season.

Table 1 shows for each State the number of cases reported for the 24 weeks since the increased incidence began, and comparative figures for the corresponding period of each of the 3 preceding years; it also includes weekly data for 1935.

<sup>1</sup> From the Office of Statistical Investigations, U. S. Public Health Service. These summaries include only the 8 important communicable diseases for which the Public Health Service receives regular weekly reports from the State health officers. The numbers of States included for the various diseases are as follows: Typhoid fever, 48; poliomyelitis, 48; meningococcus meningitis, 48; smallpox, 48; measles, 47; diphtheria, 48; scarlet fever, 48; influenza, 44 States and New York City.

TABLE 1.—*Poliomyelitis cases reported in each State during recent weeks<sup>1</sup> of 1935*

State	24 weeks ended—				Cases reported in 1935 for week ended—						
	Oct. 15, 1932	Oct. 14, 1933	Oct. 13, 1934	Oct. 12, 1935	Aug. 31	Sept. 7	Sept. 14	Sept. 21	Sept. 28	Oct. 5	Oct. 12
All States <sup>2</sup> .....	2,843	3,862	5,944	8,884	1,088	1,007	849	665	569	445	336
New England:											
Maine.....	37	40	12	116	16	17	12	18	14	7	13
New Hampshire.....	3	6	6	52	6	3	4	5	4	3	3
Vermont.....	2	19	6	33	2	4	2	5	7	3	6
Massachusetts.....	37	339	61	1,232	166	169	143	132	88	99	52
Rhode Island.....	8	16	1	303	58	31	36	37	32	25	13
Connecticut.....	22	64	13	348	39	38	38	32	33	22	18
Middle Atlantic:											
New York.....	251	1,229	186	2,601	460	414	285	198	150	106	71
New Jersey.....	311	212	56	404	35	72	54	52	51	31	24
Pennsylvania.....	1,118	329	94	144	13	9	38	12	15	12	1
East North Central:											
Ohio.....	54	271	205	70	14	2	10	3	7	3	5
Indiana.....	10	29	44	28	2	3	3	3	1	1	4
Illinois.....	121	174	159	189	19	22	18	12	14	23	16
Michigan.....	81	68	175	545	108	76	65	45	30	25	29
Wisconsin.....	33	28	83	49	4	4	8	3	4	2	0
West North Central:											
Minnesota.....	88	267	61	48	5	5	8	6	2	4	3
Iowa.....	33	32	23	39	4	5	4	3	3	3	2
Missouri.....	5	29	22	25	0	3	4	1	2	2	1
North Dakota.....	25	68	8	9	1	0	0	4	0	1	0
South Dakota.....	7	23	33	6	0	0	2	0	0	0	2
Nebraska.....	18	10	8	6	0	0	0	1	1	1	1
Kansas.....	28	39	57	18	2	1	1	2	4	0	2
South Atlantic:											
Delaware.....	8	14	2	4	2	0	0	0	0	0	0
Maryland.....	25	29	19	83	5	11	7	5	13	4	6
District of Columbia.....	24	6	7	74	5	5	9	7	7	5	4
Virginia.....	33	28	55	657	31	16	21	8	10	7	1
West Virginia.....	35	67	67	33	3	3	8	2	0	1	0
North Carolina.....	28	16	28	620	9	11	14	8	15	9	9
South Carolina.....	30	8	4	27	1	1	0	0	1	1	0
Georgia.....	5	3	16	14	0	0	2	1	0	0	0
Florida.....	0	5	9	12	0	0	0	0	1	0	0
East South Central:											
Kentucky.....	21	29	88	268	36	42	18	18	19	11	11
Tennessee.....	28	94	42	69	1	3	4	4	3	1	1
Alabama.....	20	12	36	41	4	2	1	0	1	0	1
Mississippi.....	17	6	16	10	0	0	0	1	0	0	2
West South Central:											
Arkansas.....	9	7	6	21	0	0	3	3	4	0	0
Louisiana.....	26	16	9	72	1	2	1	2	1	0	4
Oklahoma.....	17	14	10	8	0	1	0	0	0	0	0
Texas.....	58	30	94	42	9	3	1	1	1	1	2
Mountain: <sup>3</sup>											
Montana.....	2	6	284	3	0	1	0	0	0	0	0
Idaho.....	0	1	112	1	0	0	0	0	0	0	0
Wyoming.....	4	11	6	1	0	0	0	1	0	0	0
Colorado.....	2	6	13	6	0	1	0	0	1	0	1
New Mexico.....	5	4	11	4	0	0	0	1	0	0	0
Arizona.....	5	4	94	13	1	1	4	2	1	0	0
Utah.....	1	7	11	6	0	1	0	0	0	0	1
Pacific:											
Washington.....	50	55	596	14	1	1	0	0	0	2	0
Oregon.....	10	21	59	11	1	0	2	0	3	1	1
California.....	88	71	2,937	505	24	24	19	27	26	29	26

<sup>1</sup> See Public Health Reports for Sept. 27, 1935, p. 1330, Aug. 30, p. 1166, and Aug. 2, p. 986, for preceding weekly data.

<sup>2</sup> Nevada excluded; no data.

*Meningococcus meningitis*.—In relation to recent years the incidence of meningococcus meningitis remained at a rather high level. For the 4 weeks ended October 5 the number of reported cases was

240, which represented an increase of almost 80 percent over the figures for the corresponding periods in 1934 and 1933, and about 50 percent over the 1932 incidence.

Table 2 gives in 4-week periods for each geographic area the number of cases of meningococcus meningitis reported since the beginning of the current year, with comparative data for the years 1934 and 1933. An examination of the table shows that all sections of the country have contributed to the high incidence of this disease, which has prevailed since the beginning of the year. During the 4 weeks ended October 5, the incidence in the West North Central area dropped to the level of last year, and in the East North Central it dropped below that of last year, but in all other sections the number of cases remained well above the numbers reported in recent years.

TABLE 2.—*Meningococcus meningitis cases reported in each geographic area during 1935, 1934, and 1933*

Geographic area and year	Year to date	4-week period ended—									
		Jan. 26	Feb. 23	Mar. 23	Apr. 20	May 18	June 15	July 13	Aug. 10	Sept. 7	Oct. 5
All States: <sup>1</sup>											
1935.....	4, 602	307	525	646	659	705	568	392	292	268	240
1934.....	1, 837	210	227	225	249	220	178	134	130	129	135
1933.....	2, 385	362	307	393	340	230	202	145	147	129	130
New England and Middle Atlantic:											
1935.....	981	42	52	111	127	155	136	109	87	66	96
1934.....	360	38	40	42	36	41	42	26	39	28	28
1933.....	498	58	58	63	72	39	44	34	48	45	27
East North Central:											
1935.....	1, 111	79	120	149	189	195	128	92	67	57	35
1934.....	533	60	58	58	83	59	54	42	36	39	44
1933.....	759	115	86	137	115	89	79	51	30	28	29
West North Central:											
1935.....	524	33	81	90	75	83	62	27	30	26	17
1934.....	235	16	31	26	35	34	28	12	14	21	18
1933.....	304	53	39	63	40	34	25	13	16	12	9
South Atlantic:											
1935.....	868	54	93	121	108	150	121	77	48	66	30
1934.....	208	25	24	29	41	21	13	16	10	12	17
1933.....	245	41	43	26	30	17	16	15	16	15	26
East and West South Central:											
1935.....	688	67	124	114	101	68	63	49	32	29	41
1934.....	332	48	47	51	35	51	28	15	19	18	20
1933.....	382	68	56	60	56	35	21	20	25	14	27
Mountain and Pacific: <sup>1</sup>											
1935.....	430	32	55	61	59	54	58	38	28	24	21
1934.....	169	23	27	19	19	14	13	23	12	11	8
1933.....	207	27	25	44	27	16	17	12	12	15	12

<sup>1</sup> Nevada excluded; no data.

*Smallpox.*—For the 4 weeks ended October 5 there were 109 cases of smallpox reported. Of the total number, Kansas reported 31, Washington 16, North Dakota, South Dakota, and Nebraska 7 each; Wisconsin and Wyoming 6 each; the remaining cases were widely distributed over the various geographic areas. In the West North Central area, where several of the above-mentioned States are located, the total number of cases (59) was more than 3 times last year's figure for this same period, while in the South Central area only 3

cases were reported, as against 25 last year. Only 1 case was reported from the South Atlantic group of States and none from the New England and Middle Atlantic groups.

*Scarlet fever.*—For the 4 weeks under report, 8,277 cases of scarlet fever were reported—an increase of approximately 4,300 over the preceding 4-week period. All regions contributed to this increase. A rise in scarlet fever incidence is normally expected at this time of the year, and a comparison with preceding years shows that the current figures are about on a level with those for the corresponding period in each of the 3 preceding years. In the West North Central and the Mountain and Pacific regions, where the disease has been quite high throughout the current year, the incidence remained well above that of preceding years; the East North Central and South Atlantic States reported fewer cases than last year; and the New England and Middle Atlantic and South Central regions approximated last year's figures.

*Typhoid fever.*—The expected seasonal decline of typhoid fever was reported from practically all sections of the country. During the current 4-week period 2,604 cases were reported. For the corresponding period in 1934, 1933, and 1932, the cases totaled 2,885, 3,093, and 3,583, respectively. In all regions except the South Central the current incidence was the lowest for this period in recent years. Several of the South Central States contributed to a 15 percent increase over last year's figures; the largest excesses were reported from Kentucky, Louisiana, and Oklahoma.

*Measles.*—The number of cases of measles declined further during the current 4-week period. The total number of reported cases (2,306) was about 75 percent of last year's figure for the corresponding weeks and was about on a level with the incidence in each of the 5 preceding years. A similar situation as that described for the whole reporting area existed in each section of the country, except the Mountain and Pacific, where the decline was somewhat slower and the number of cases was still about 25 percent above last year's figure for this period.

*Diphtheria.*—A rather sharp increase in diphtheria is normally expected at this time of the year. For the 4 weeks ended October 5 the number of cases totaled 3,821, approximately 1,000 more than were reported for the preceding 4 weeks. As compared with recent years the current incidence was about 10 percent above that of last year but was considerably below each of the 5 preceding years. The South Atlantic States reported fewer cases than last year, but in all other sections the current incidence exceeded that of last year. The North Central and the Mountain and Pacific regions reported the greatest increases.

*Influenza.*—The cases of influenza reported for the current 4-week period numbered 1,956, as compared with 1,776, 2,137, and 2,593 for the corresponding period in the years 1934, 1933, and 1932, respectively. In the New England and Middle Atlantic and the Mountain and Pacific regions the disease was less prevalent than at this time last year, but all other sections reported slight increases over last year's figures. While the number of cases in the North Central and South Central regions has not been large, the disease has been considerably more prevalent there throughout the entire year than it was in 1934.

*Mortality, all causes.*—Deaths from all causes in large cities, as reported by the Bureau of the Census for the current 4-week period, averaged 10.0 per thousand inhabitants (annual basis), as compared with 9.9, 9.8, and 9.5 for the corresponding period in the years 1934, 1933, and 1932, respectively.

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## CULTIVATION OF THE VIRUS OF ROCKY MOUNTAIN SPOTTED FEVER IN THE DEVELOPING CHICK EMBRYO

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In an effort to cultivate the virus of Rocky Mountain spotted fever, the chorio-allantoic membrane of the developing chick embryo was used in accordance with the technique of Goodpasture.

Since there is no evidence at the present time that the virus of Rocky Mountain spotted fever can be propagated outside the animal body on media which do not contain living elements, the choice lies between the tissue-culture method and cultivation in the developing chick embryo, though the method of Silber and Dosser (1) of cultivating the virus of typhus exanthematicus with non-pathogenic yeasts or bacteria merits consideration.

The tissue-culture method has been used in a few cases. Wolbach and Schlesinger (2) reported the cultivation of the virus of Rocky Mountain spotted fever in tissue plasma culture in 1923. In 2 experiments, the virus was carried through 4 "generations", and in 1 experiment through 6 "generations." Pinkerton and Hass (3) cultivated the rickettsiae of Rocky Mountain spotted fever in tissue culture, their method differing from Wolbach's in that the same infected cells were propagated indefinitely.

The chick-embryo method is being used increasingly in the cultivation of viruses and has also been used in attempts to cultivate poorly growing bacteria such as the leprosy bacillus. It offers the advantage that readily accessible living tissue is available and that by a simple technique the tissue may be inoculated and, if growth is obtained,

it may be possible to continue such growth through a series of passages. This technique has been successfully applied in the cultivation of the viruses of fowl-pox by Woodruff and Goodpasture (4), vaccine virus by Goodpasture, Woodruff, and Buddingh (5), Nauck and Paschen (6), Stevenson and Butler (7), and Lehmann (8); "a disease of parrots and parrakeets differing from psittacosis", by Rivers and Schwentker (9); herpes simplex, by Dawson (10); infectious laryngo-tracheitis, by Burnet (11); vesicular stomatitis, by Burnet and Galloway (12); fowl plague and Newcastle disease, by Burnet and Terry (13); psittacosis, by Burnet and Rountree (14); equine encephalo-myelitis, by Higbie and Howitt (15); and alastrim, by Torres and Teixeira (16).

Among those diseases in which rickettsiae occur, Zia (17) has reported the cultivation, through the third generation, of the rickettsiae of Mexican typhus fever. Da Cunha (18) has reported the cultivation of the virus of typhus exanthematicus of Sao Paulo, which corresponds immunologically with the North American Rocky Mountain spotted fever. He studied the first-generation culture without attempting to carry the virus further in the chick embryo. The material used as inoculum was spleen from an infected guinea pig in which no rickettsiae could be demonstrated. Rickettsiae were found, however, in the membrane of the chick embryo.

*Technique.*—The cover-slip method of making inoculations of the membrane was found the most satisfactory of the methods tried. A carborundum disk driven by a dental engine was used in making a triangular opening in the shell in the neighborhood of the location of the embryo, as revealed by candling. After swabbing with alcohol and flaming, the shell membrane was cut through on two sides of the triangle and the flap bent back, tearing the membrane on the third side of the triangle. The three sides of the triangle were ringed with sterile vaseline and a sterile cover slip was placed over the opening. The eggs were usually incubated a day or two longer before being used. Employing this method it was possible to make observations of the embryo through the cover-slip window and thus to judge whether deaths were due to the action of the virus or to some other cause. The method of Higbie and Howitt was used for making the inoculations. The inoculum was taken up in a 1-cc syringe, fitted with a 23-gage needle, which was introduced through the vaseline at one corner of the triangle, and the suspension was allowed to drip on the surface of the membrane. When it was desired to remove the membrane, an oval ring was cut in the shell with the dental engine, the shell membrane was cut through with a sterile knife, and the cap was removed.

The eggs were incubated at the usual chicken incubator temperature of 39.5° C. and, after inoculation, removed to a bacteriological

incubator regulated at 37.5° C. Beginning with the eighteenth generation, some of the embryos were incubated at a temperature of 33° C. Embryos 10 to 12 days old were used for the inoculations.

*The strain used for propagation.*—The strain of Rocky Mountain spotted fever used in the cultivation experiments was procured from the Public Health Service laboratory in Montana. This strain is known as the Bitterroot strain; it has been used extensively for experimental work and provokes typical reactions in guinea pigs. In the routine maintenance of this strain, guinea pigs are inoculated intraperitoneally with 1 or 2 cc of heart blood taken from an infected guinea pig on the second day of fever. This results in the infection of practically all the inoculated guinea pigs, with the febrile reaction beginning usually on the third day after inoculation.

About 75 percent of male guinea pigs develop the typical spotted fever scrotal reaction, following inoculation with the Bitterroot strain. This reaction first appears as a rash and proceeds to necrosis and sloughing if death does not intervene. The time of appearance of the rash varies somewhat, the limits being between the first and eighth day of fever, the usual time of appearance being the third to the fifth day.

Approximately 87 percent of infected guinea pigs succumb to the disease commonly between the sixth and eleventh day of fever, with the eighth being the most frequent day of death. At autopsy these animals show varying degrees of necrosis of the scrotum and an enlarged, smooth, dark spleen. In guinea pigs recovering from the infection, the temperature reaches normal after 1 to 2 weeks of fever.

In beginning the cultivation experiment the spleen was removed from a guinea pig in the second day of fever following inoculation with the Bitterroot spotted fever strain of virus. The spleen was weighed, and a 10-percent suspension made with sterile salt solution. This suspension was further diluted to 1/10, and the amount of the inoculum used was 0.1 cc of this dilution.

*Serial passage of the growth in the chick embryos.*—For passages succeeding the first inoculation, a portion of the membrane which had been exposed to the action of the inoculum, approximately one-tenth of the entire membrane, was macerated and suspended in sterile 0.85-percent salt solution, and 0.1 cc of this suspension used to inoculate a new series of eggs. Transfers were usually made from more than one embryo. The number of the embryos inoculated at each passage was six or more. In some cases dilutions of 1/10 and 1/100 of the original suspension were used. Transfers were usually made 5 days apart, though a few were made 4 and 6 days apart.

At the time of making the transfers to a new series, a small amount of membrane was macerated on a slide and stained by Gram's method, to determine whether bacteria were present, and small amounts of

tissue were planted in glucose agar, blood agar, and broth. The cultures were sterile throughout the experiments, except that a staphylococcus contaminant was present in the membrane in one instance, and a mold was observed growing on the membrane of two of the embryos.

A part of the suspension of each membrane used for inoculating a new series of eggs was inoculated intraperitoneally into two guinea pigs, in order to determine whether the virus was still active. The results in the guinea pigs will be considered more at length later in the discussion.

The cultivation of the virus in the embryo by the method described was found to be comparatively easy. During the period from April 24 to August 3 the virus was continued through 20 passages.

Daily observations were made of the embryos, and the time of death was recorded. A number of deaths occurred on the first, second, and third days, which probably were not the result of the virus infection. These may have been due to trauma or to other causes. Deaths on the fifth and sixth days occurred with sufficient regularity to make it quite probable that these were usually the result of the infection with spotted fever. A few embryos survived 7 and 8 days, and occasionally one attained full maturity and hatched. As controls, may be cited chick embryos which were inoculated with the virus of endemic typhus fever, and the virus of lymphocytic choriomeningitis. These latter viruses were being cultivated similarly in the chick embryos at the same time as was the Rocky Mountain spotted fever virus. The period of incubation used for these viruses was 6 and 7 days. Regular deaths as noted above, following the inoculation of the Rocky Mountain spotted fever virus, did not follow the inoculation with the other two viruses.

The virus apparently had a lethal effect on the embryo from the beginning of the cultivation experiments, and there was no evidence that the virulence for the embryo decreased during the continued passage of the virus. On the other hand, there was some indication that the virulence increased. In the fourth generation 9 embryos, in groups of three, were inoculated with virus from the preceding generation. One embryo died on the second day and the remaining embryos were all living on the sixth day. Three of these were used for passage to the next generation, and of the remaining embryos, two died on the seventh day, two on the eighth day, and the remaining embryo hatched on the ninth day. In the fifteenth generation, 18 embryos were inoculated from one embryo of the preceding generation. Of these, 2 died on the second day, 1 on the third day, 2 on the fourth day. On the fifth day, 8 of the remaining embryos were dead and 5 were living. In the nineteenth generation, incubated at 33° C., there were only 2 embryos among 9 living on the fourth day. In the



twentieth generation, of 8 embryos all were living on the fourth day, and all were dead except 2 on the fifth day.

*Distribution of the virus.*—Portions of the membrane some distance removed from the site of inoculation were shown to be infectious by inoculation into guinea pigs. The virus was not confined to the membrane, but developed also in certain of the organs. In the seventh and eighteenth generations the liver and brain were found to be infective for guinea pigs, bringing about the usual temperature rise characteristic of Rocky Mountain spotted fever. Titration on guinea pigs of pooled brain material in the eleventh generation showed a lower concentration of virus in the brains than in the membrane.

*The lesion.*—A rather characteristic lesion developed at the site of inoculation. By the method of inoculation used, that of allowing the suspension of tissue to drop on the membrane from a hypodermic syringe, the portion of the membrane beneath the window which was not adherent to the shell was exposed to the action of the inoculum. Usually an artificial air sac was present at this locality, but sometimes not, in which case the membrane became adherent to the cover slip used for covering the opening. By means of a dissecting microscope, the development of the lesion could be readily observed. The portion of the membrane adherent to the cover slip showed small, discrete, cloudy areas, and these areas appeared as moist, round, convex colony-like protuberances on the membrane when it was not adherent to the cover slip or to the shell. These usually developed in the course of 2 or 3 days. There was considerable variation in the development of the lesion, some membranes showing only a few colonylike elevations and others showing a great many (fig. 3). In the early generations the elevations were not particularly noticeable, and it was only in the fourth and later generations that they were conspicuous. In the course of 4 to 5 days the colonylike growths appeared to coalesce and become drier in appearance, and the part of the membrane not adherent to the shell showed a rugose, cloudy appearance, with thickening and edema. In some cases the cloudy appearance was so pronounced that the membrane appeared whitish. The portion of the membrane which was adherent to the shell was moist and cloudy and edematous.

*Rickettsiae.*—The presence of rickettsiae was not definitely ascertained in the early generations. After the virus had been carried through a number of generations, and it had been demonstrated that the virus was actually multiplying, more detailed studies were made. The method used was that of making impression smears of the membrane in the manner described by Burnet and Rountree, but slightly modified. The portion of the membrane which had been exposed to the action of the inoculum was transferred to a slide, the ectodermal

side down, and covered with blotting paper. This was then covered with another slide. It was found convenient to clamp the slides together with binder clips at each end, then to flame lightly, or to allow the preparation to remain for one-half to 1 hour without flaming. The blotting paper was removed, carrying most of the tissue with it. In this way a layer of the epithelial cells usually remained on the slide.

Typical rickettsiae were found in the membranes of all the generations succeeding the tenth. Though not exceedingly numerous, they were present in moderate numbers in many fields (figs. 1 and 2). They were rather definitely more numerous in the membranes of embryos incubated at 33° C., than in those incubated at 37.5° C. In those incubated at 37.5° C. the number of rickettsiae per cell varied from 5 or 6 to 25 or even 50, and occasionally about 100. In those incubated at 33° C. there were more cells infected and the number of rickettsiae per cell sometimes approached several hundred. No cells packed with rickettsiae were found at either temperature. The number of cells containing rickettsiae per field could not be easily estimated, as some groups of epithelial cells contained no rickettsiae, while in other groups a considerable number of the cells were infected, particularly at the margin of the group.

The rickettsiae usually occurred characteristically in the cytoplasm of the cells, frequently in a peripheral position. No rickettsiae were observed in the nuclei of the cells. They were sometimes found outside the cells, particularly in membranes from embryos which had died recently and in those which were probably near the lethal point. Groups containing quite large numbers of organisms outside the cells occurred in some of the generations, particularly in the eighteenth and nineteenth. In some of these the appearance of the preparations suggested a breaking down of the cell structure.

In the twelfth generation great numbers of organisms which appeared somewhat larger than rickettsiae were present in the brain. These were so numerous that they were seen in practically every field. The first inclination was to consider them not rickettsiae; but in view of the appearance of some of the organisms seen later, which were undoubtedly rickettsiae, the possibility that these were also rickettsiae did not seem so unlikely. A suspension of the membrane of the embryo in question was transferred to 20 eggs, and rather numerous perfectly typical rickettsiae were present in some of these and no growth on artificial culture media occurred with any of them.

Various parts of the embryo were studied for the occurrence of rickettsiae. No definite organisms were observed in the liver, kidney, or spleen, nor in the lining of the intestinal tract. They were present in the region of the umbilicus, but not to any greater extent than in the remainder of the membrane.

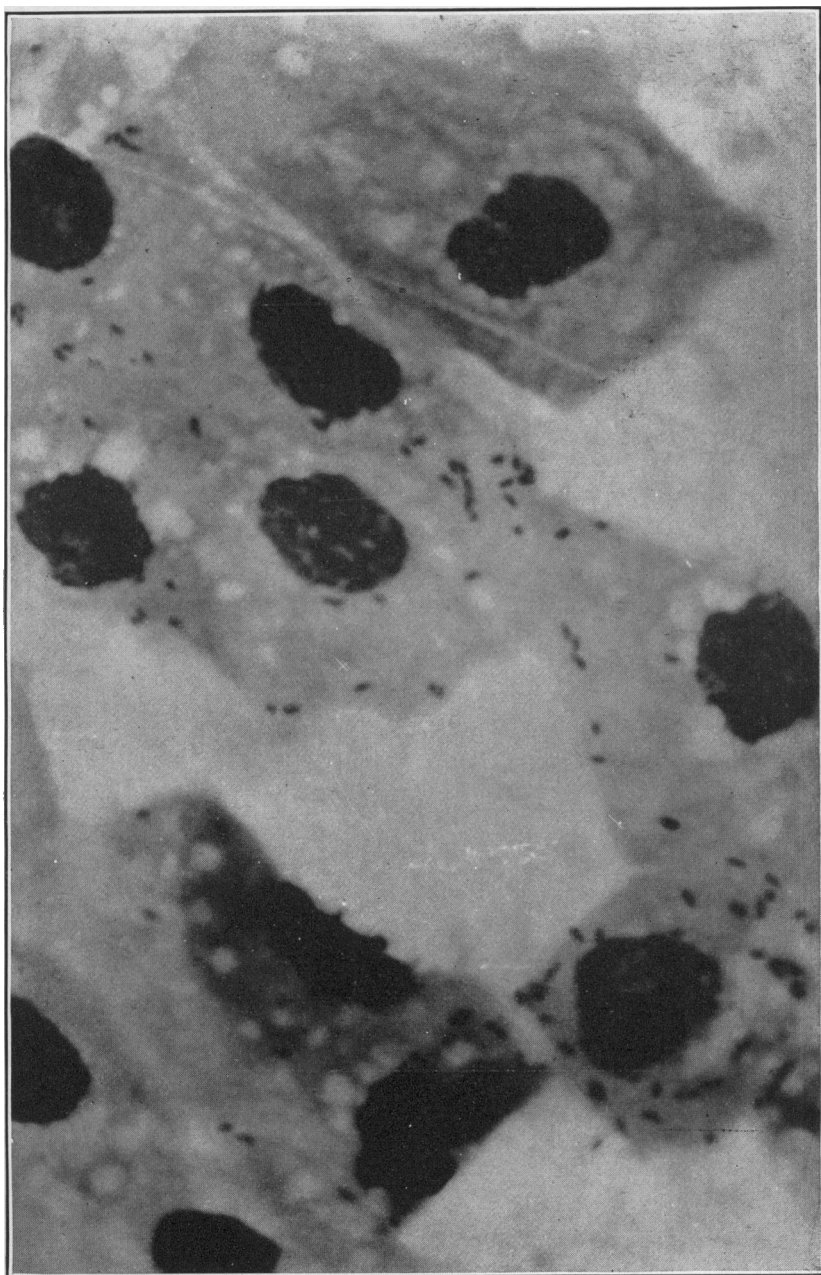


FIGURE 1.—Rickettsiae in chorio-allantoic membrane. Tenth passage. Temperature, 37.5° C. Giemsa stain. Approximately  $\times 2,000$ .

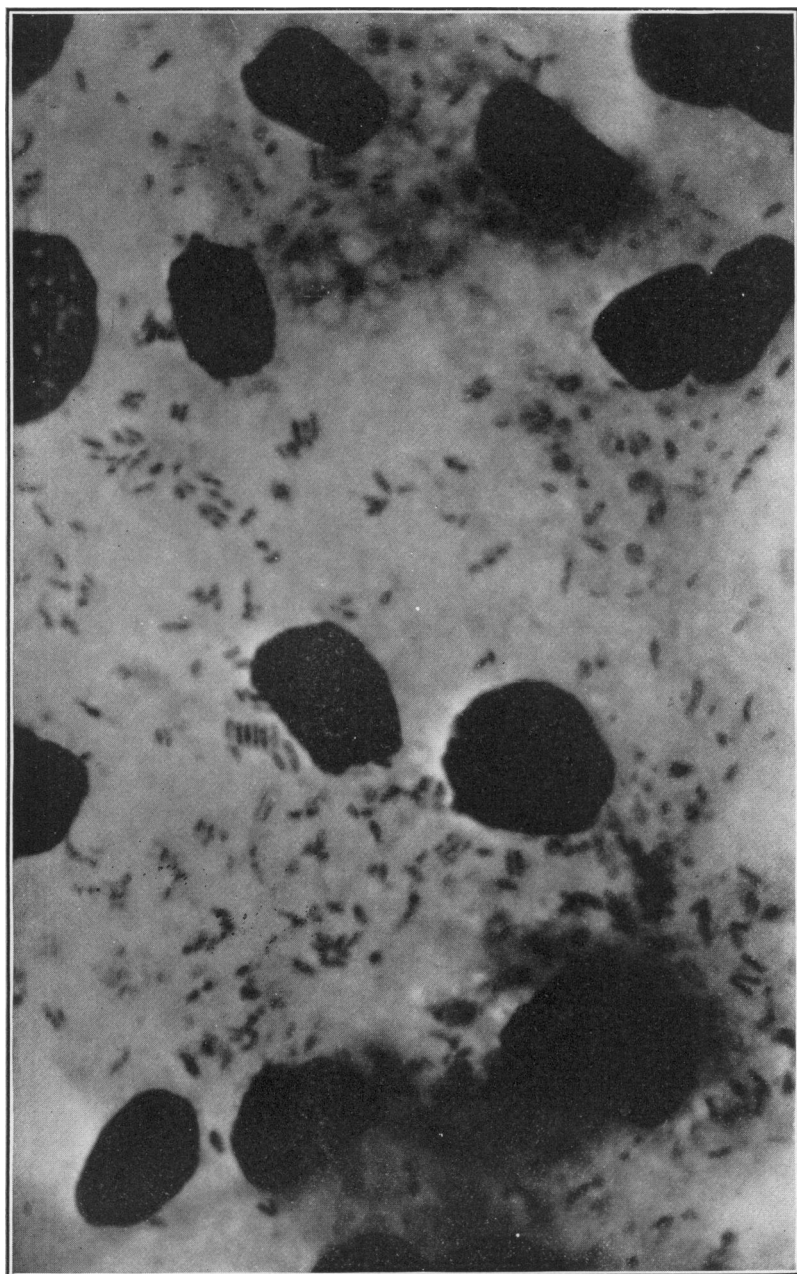


FIGURE 2.—Rickettsiae in chorio-allantoic membrane. Eighteenth passage. Temperature, 37.5° C. Giemsa stain. Approximately  $\times 2,000$ .

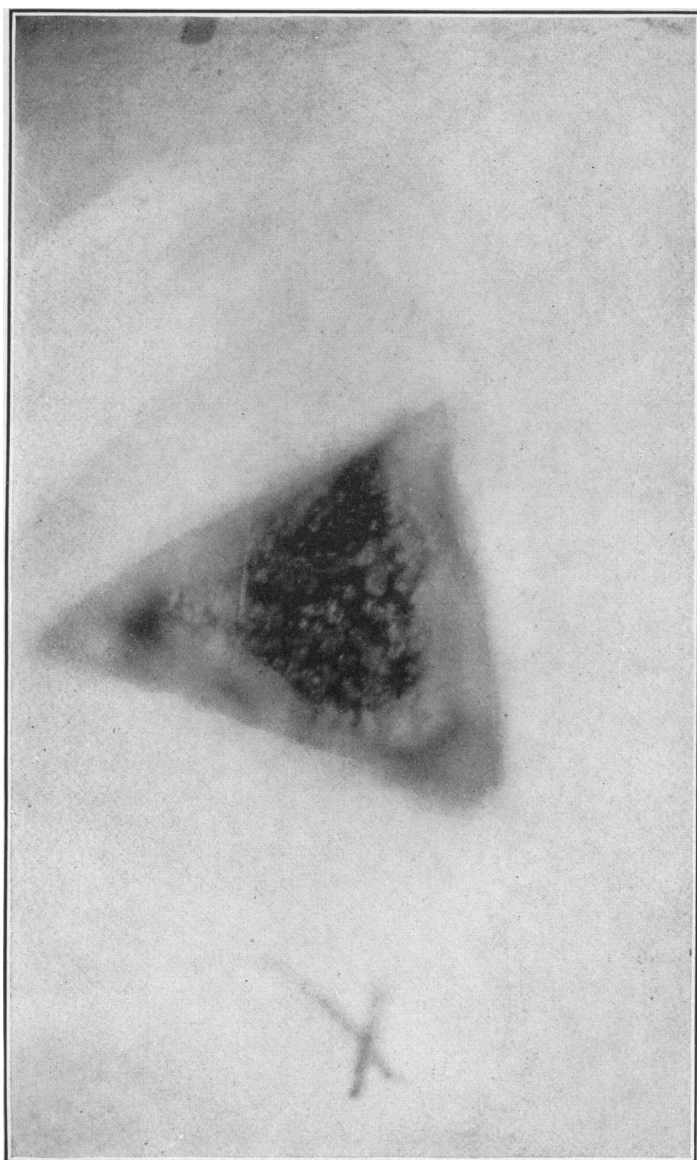


FIGURE 3.—Lesion on chorio-allantoic membrane. Three days.

The morphology of the organisms was, in general, consistent with that of typical rickettsiae. There was slight tendency to chain formation, though pairs of organisms were often seen. There was at times some variation in size and staining properties among the preparations from different embryos, but this was probably influenced to a certain extent by the condition of the embryo, i. e., whether it was in a viable or dying condition. There was also some evidence of variation in the morphology of the organism in the same preparation. A few swollen forms and gradations from these down to small coccoid forms were sometimes seen. The fact that rickettsiae were present in the generations far removed from the original material used to initiate the growth is evidence that these organisms are concerned as a causative factor in the disease.

The Giemsa stain was used throughout the study, the slides being allowed to remain in the stain over night. The organisms usually stained a bluish purple, though in some cases they were reddish. The reddish staining may have been due to the differences in the stain itself, though a buffered solution adjusted to pH 7.0 was used in the preparation of the stain.

*Results of inoculation of guinea pigs with the chick embryo virus.*—All guinea pigs inoculated with chick embryo material were observed carefully, and daily temperature readings were made until time of death or discharge. The records of guinea pigs inoculated during the first 20 generations are included in this discussion.

In addition to testing on guinea pigs all egg material used to inoculate new series of eggs, a number of guinea pigs were inoculated with chick embryo material for other purposes, such as for determinations of the potency of the virus at different stages, using individual and pooled specimens, determination of the length of time necessary for the virus to develop, and determination of the presence of the virus in various organs of the embryo. Fifty-seven eggs were used in the actual maintenance of the egg-passage strain for 20 generations. Material from 3 of these 57 eggs was not inoculated into guinea pigs. Specimens from the membranes from each of the remaining 54 eggs were inoculated into guinea pigs. Two guinea pigs inoculated with material from one egg in each of the fourth and ninth egg-passage generations failed to show evidence of spotted fever. The two eggs from which these inoculations were made had been incubated only 2 days after inoculation. All of the remaining 104 guinea pigs inoculated with material from 52 eggs showed evidence of spotted fever comparable to guinea pigs inoculated with the Bitterroot strain maintained continuously in guinea pigs, with the exception that the guinea pigs inoculated with material from the strain of virus carried in the eggs have shown a somewhat shorter incubation period and have died, on the average, one day earlier in the course of the disease and

the fatality rate has been 1 percent higher. As the number of guinea pigs included in the study is relatively small, the conclusion is not warranted that egg cultivation has increased the virulence of the strain for guinea pigs, although it is surely evident that no decrease in virulence has taken place.

At the time of writing this report the course of the disease has been completed in the guinea pigs inoculated with material from eggs used in the first 13 egg-passages. In these 13 generations, 80 guinea pigs developed clinical spotted fever, ending in death in 72, while 6 recovered and were later found to be immune to the Bitterroot stock strain. The remaining two guinea pigs were killed to recover material for transfer to other animals.

Two guinea pigs that had developed clinical spotted fever following inoculation with material from eggs in the fourteenth egg transfer generation and two from the fifteenth generation were killed during the course of the disease and subjected to histological examination by Dr. Lillie, who found changes diagnostic of spotted fever (19).

In confirmation of our observation made on guinea pigs inoculated directly with material from eggs, 2 strains were established from embryos and carried in guinea pigs for 11 passage generations in these animals. One of these strains was established by the inoculation of a part of the chorio-allantoic membrane taken from an egg in the eighth egg-passage generation, while the second strain was established from the seventh generation by the inoculation of guinea pigs with the brain of the embryo. In the study of one of these strains, 40 guinea pigs were inoculated in the course of 11 guinea pig passage generations, while 58 guinea pigs were inoculated with the second strain in 11 generations. No clinical variations were noted in the comparison of guinea pigs inoculated with either of these experimental strains with the clinical picture produced by the original Bitterroot stock strain. Each strain produced complete cross immunity with the Bitterroot strain and also produced a positive Weil-Felix reaction in rabbits. Histologic examination by Dr. Lillie showed the lesions characteristic of the disease in guinea pigs (19).

*The potency of the virus.*—The membranes, almost without exception, produced symptoms of Rocky Mountain spotted fever when inoculated into guinea pigs. Except when attempts were made to titrate the virus contained in the membranes by the use of dilutions, the guinea pigs probably received comparatively large doses.

Apparently the chick embryo is less resistant to the virus than the guinea pigs, if the length of survival after inoculation, as noted earlier, may be considered a criterion.

A test was made to determine the strength of the virus in the first generation. Approximately one-tenth of the membrane was diluted to 5 cc, and this was considered a dilution of one-tenth. Dilutions of

1/100 and 1/1000 were made from this. All guinea pigs inoculated with these dilutions developed spotted fever.

Later in the course of the work higher dilutions were tested on guinea pigs. The entire membrane was weighed, macerated with sterile sand, and made up to a volume in cubic centimeters corresponding to 10 times one-half the weight in grams, thus allowing for a 50 percent moisture content.

From the dilution of 1/10, dilutions varying from 1/100 to 1/100000 were made. Positive results were obtained in guinea pigs with the 1/10, 1/100, 1/500, and 1/1000 dilutions in the 14th generation, and with the 1/100, 1/1000 and 1/10000 dilutions in the 16th generation. In the 17th positive results were obtained in the 1/100 and 1/1000 dilutions, but not in the 1/10000 and 1/100000 dilutions. Apparently the limit of infectivity for guinea pigs was, within the limits of these experiments, about 1.0 cc of the 1/10000 dilution of the entire membrane.

#### SUMMARY

The virus of Rocky Mountain spotted fever was cultivated in the developing chick embryo and maintained through 20 passages without diminution in virulence for either the embryo or the guinea pigs. There was, on the other hand, some evidence of increase in virulence for the embryos, as they died earlier in the late generations. Guinea pigs inoculated with the embryo virus also developed fever earlier and died on the average 1 day earlier than when inoculated with the guinea-pig virus.

The virus was apparently more virulent for the embryos than for guinea pigs, as the embryos usually succumbed on the fifth or sixth day after inoculation, while the average length of time of survival of the guinea pigs was 7 days. The membrane was at times infective for guinea pigs in dilutions up to 1/10000. The virus was present in the brain and liver of the embryo, but the concentration of virus was lower in the brain than in the membrane.

Typical rickettsiae were present in the epithelial cells of the chorion-allantoic membrane of the embryo. The fact that rickettsiae were present in passage material far removed from the original material used for initiating growth lends support to the view that these organisms are concerned as the causative agent of the disease.

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## HISTOLOGIC REACTION TO THE VIRUS OF ROCKY MOUNTAIN SPOTTED FEVER IN CHICK EMBRYOS

By R. D. LILLIE, *Surgeon, United States Public Health Service*

The purpose of this paper is to record briefly the essential pathologic alterations found in the bodies and fetal membranes of 25 chick embryos of 12 to 19 days' incubation, taken 2 to 6 days after infection with the virus of Rocky Mountain spotted fever (Bitterroot strain).

This material was derived from the experiments concurrently reported by Bengtson and Dyer.

The chick embryos were fixed entire in Orth's bichromate formalin mixture, after opening the abdomen and skull. At first various organs were dissected out and sectioned. On account of the extremely soft consistency of the fetal brain, this procedure was found impractical, and consequently a number of cross sections of the entire head were made. As these proved satisfactory and included also skin, bone marrow, pharynx, and other structures, a similar procedure was applied to the trunk organs. One cross section was made through the chest to show heart and lungs, another through the upper abdomen, showing liver, spleen, mesonephros and metanephros, and a third through the lower abdomen showing gizzard, intestines, metanephros, and cloaca. These sections also showed vertebrae, spinal cord, ganglia, ribs, muscles, and skin.

Paraffin sections were prepared and stained by our buffered Romanowsky stain and with iron chloride hematoxylin (Weigert) and picrofuchsin (Van Gieson).

Nine chick embryos of about the same age were used as control material. Eight inoculated with typhus virus and four with the virus of lymphocytic choriomeningitis were also used for comparison.

Two 18-day chick embryos from the fourth virus passage generation, killed 6 days after inoculation, showed essentially no lesions in the viscera, except for a slight lymphocyte infiltration of the chorioid plexi of the brain in one, and only a moderate edema and a patchy, rather sparse pseudoeosinophil leucocyte infiltration in the chorio-allantois.

Lesions within the embryos began to appear in the ninth or tenth passage generation, and in subsequent passages, including the seventeenth, have remained fairly constant.

Generally the chorio-allantois at the site of inoculation has shown a more or less marked edema accompanied by focal interstitial and perivascular infiltration by lymphocytes, a rather conspicuous focal fibroblast proliferation proceeding from one side of vessels, and a patchy, diffuse, sparse to moderate infiltration by polymorphonuclear leucocytes. Focal hemorrhages were infrequent, and endothelial proliferation, swelling, necrosis, and vascular thrombosis were rare. As irregular edema, patchy leucocyte infiltration, and clumps of lymphocytes and myelocytes occurred also in uninfected control chicks, the significant features appear to be the vascular adventitial proliferation and lymphocyte infiltration and the occasional endovascular lesions.

Occasional clumps of myelocytes were found in the derma of the head region in control birds, and the skin elsewhere showed no focal infiltration. In chicks infected with spotted fever there was usually a focal perivascular infiltration by lymphocytes, more marked in the skin of the head than on the trunk. Proliferative changes, either adventitial or intimal, were not seen.

The pharyngeal mucosa also often showed a more or less dense, patchy infiltration by lymphoid cells, which was absent in controls. In the mucosae of the esophagus and proventriculus, patches of infiltration by lymphoid cells and, often, myelocytes as well, were often seen. As clumps of myelocytes were occasionally found in this location in control birds, this finding represents a quantitative increase rather than a qualitative change. The mucosae of the gizzard and small intestine generally showed no lesions. In the three birds in which sections of the cloaca were obtained, its mucosa was packed with myelocytes or large lymphoid or promyeloid cells, suggesting an area of normal or possibly exaggerated myelopoietic activity.

In somewhat over half of the birds the muscularis of the gizzard showed a focal perivascular lymphocyte infiltration which was absent in control material. The muscular layers of other portions of the gastrointestinal tract showed no focal lesions.

The serosa of the stomach and intestines and the mesentery contained clumps or nodules of lymphocyte infiltration in about one-

third of the birds. As similar nodules are occasionally seen in supposedly normal controls, this finding is of less significance, but apparently represents a definite increase.

The liver almost regularly showed a slight to moderate periportal lymphocyte infiltration, occasionally with some admixture of myelocytes. In control birds this finding was unusual.

In control birds the spleen pulp was usually packed with granular myelocytes, occasionally with both promyelocytes and granulocytes. In spotted fever the spleen tended to be somewhat enlarged (11.3 mm,<sup>2</sup> as compared with 4.0 mm<sup>2</sup> in cross-section area). Its pulp was generally quite cellular. The cell content was largely granular myelocytes in about half of the birds and mixed or predominantly of large lymphoid or promyeloid cells in the remainder. Some apparent swelling of the pulp reticulo-endothelium was evident in about one-third of the birds; and in one, small fibrin thrombi were scattered through the pulp.

The pancreas usually showed a moderate interstitial infiltration by granular myelocytes and large lymphoid cells in varying proportions, on the average about equal. In normal control material no infiltration was seen, and in the other conditions under study the infiltration was less frequent and less marked and tended to be purely myelocytic.

The bone marrow of the vertebrae, ribs, and skull was usually more or less densely cellular and showed a marked and extensive replacement of granular myelocytes by deeply basophilic lymphoid and promyeloid cells, and the remaining granular myelocytes showed much more cytoplasmic basophilia than normal. In the normal controls and in the embryos infected with typhus and with lymphocytic choriomeningitis virus, the marrow was composed largely of granular myelocytes.

In about one-fourth of the birds small foci of perivascular lymphocyte infiltration were found in the skeletal muscles. These foci were absent in the controls.

In the mesonephroi and metanephroi there were often foci of interstitial and perivascular lymphocyte infiltration. These were somewhat more frequent in the mesonephros than in the kidney. None of the control material, normal or otherwise, showed such foci.

In about half of the chicks small foci of interstitial or perivascular infiltration by lymphocytes, occasionally also a few myelocytes or leucocytes, were seen in the myocardium, epicardium, or both. No such foci were encountered in any of the control material.

In normal chicks the lungs regularly show nodules and clumps of granular myelocytes in their mesenchymal stroma. In spotted fever this infiltration is usually similar or more often more marked in extent. The cells of the infiltration were sometimes predominantly granular myelocytes, more often predominantly or purely lymphoid

or nongranular promyeloid cells, and in about half approximately equal proportions were present.

The brain cord and cerebral and spinal root ganglia usually showed no focal lesions. One focus of perivascular lymphocyte infiltration was seen in the brain of one chick. In about half of the chicks the chorioid plexi presented foci of lymphocyte infiltration. One normal and one diseased control animal showed single clumps of myelocytes in the chorioid plexi; the others showed no lesions. In about one-third of the birds the cerebral meninges contained clumps of lymphocytes. None were seen in normal controls.

#### SUMMARY

The focal lesions of Rocky Mountain spotted fever in chick embryos are as follows: (1) Perivascular or interstitial infiltration by lymphocytes, occurring in the fetal membranes, skin, muscles, kidneys, Wolffian bodies, heart, liver, serosae of the gastrointestinal tract, gizzard muscle, meninges, and chorioid plexi; (2) focal adventitial fibroblast proliferation of vessels, vascular endothelial swelling, and occasional vascular thrombonecroses, occurring only in the fetal membranes.

Other changes were exaggeration of normal myeloid collections in the lungs and proventricular mucosa, occurrence of these in the pancreas and a tendency to replacement of granular myelocytes in these collections and in the spleen pulp and bone marrow by nongranular promyeloid and lymphoid cells.

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#### COURT DECISION ON PUBLIC HEALTH

*Town can be held to respond in damages for injuries resulting from disrepair of septic tank.*—(Mississippi Supreme Court, Division B; *Hodges et ux. v. Town of Drew*, 159 So. 298; decided Feb. 11, 1935.) An action was brought by the plaintiffs, husband and wife, against the town of Drew to recover damages for injuries to the plaintiffs' health and comfort and to their land, alleged to have been caused by the improper and negligent maintenance by the defendant of its septic tank. The trial court, at the conclusion of the evidence, directed a verdict for the defendant, and the plaintiffs appealed.

The evidence for the plaintiffs showed that the town had permitted the septic tank to fall into disrepair to such an extent that sewage overflowed and contaminated the surrounding land and the waters of a nearby lake. The septic tank and the lake, in part, were situated on the plaintiffs' farm. Offensive and nauseating odors were emitted by the overflowing sewage. The town sought to justify the directed

verdict on the grounds (a) that the evidence failed to show that the plaintiffs suffered any peculiar or special damage on account of the maintenance of the nuisance not common to the general public, and (b) that in the construction and maintenance of the waterworks system, including the septic tank, the town was in the exercise of one of its police powers, that of conserving the public health, which was a governmental function, in the exercise of which, although wrongful, the town was not liable for damage to property. The supreme court rejected both of these contentions, reversed the judgment, and remanded the cause.

### DEATHS DURING WEEK ENDED OCT. 5, 1935

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Oct. 5, 1935	Correspond- ing week, 1934
<b>Data from 86 large cities of the United States:</b>		
Total deaths.....	7, 103	7, 054
Deaths per 1,000 population, annual basis.....	10.0	9.9
Deaths under 1 year of age.....	463	501
Deaths under 1 year of age per 1,000 estimated live births.....	43	47
Deaths per 1,000 population, annual basis, first 40 weeks of year.....	11.4	11.4
<b>Data from industrial insurance companies:</b>		
Policies in force.....	67, 681, 475	67, 062, 013
Number of death claims.....	10, 858	11, 743
Death claims per 1,000 policies in force, annual rate.....	8.4	9.1
Death claims per 1,000 policies, first 40 weeks of year, annual rate.....	9.7	10.0

# PREVALENCE OF DISEASE

*No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring*

## UNITED STATES

### CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

#### Reports for weeks ended Oct. 12, 1935, and Oct. 13, 1934

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Oct. 12, 1935, and Oct. 13, 1934*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934
<b>New England States:</b>								
Maine.....	2	1	1		21	6	0	0
New Hampshire.....	2					5	0	0
Vermont.....	1	1			6		0	0
Massachusetts.....	2	13			24	12	1	2
Rhode Island.....		2			9	3	0	0
Connecticut.....	7	2	2	1	37	18	1	1
<b>Middle Atlantic States:</b>								
New York.....	26	25	16	19	66	52	7	1
New Jersey <sup>1</sup> .....	15	12	4	7	10	2	2	0
Pennsylvania.....	36	51			48	125	4	2
<b>East North Central States:</b>								
Ohio.....	39	74	40	26	35	57	2	1
Indiana.....	119	36	17	15	3	44	2	4
Illinois.....	67	65	13	6	9	37	6	0
Michigan.....	18	16	5		17	32	3	0
Wisconsin.....	3	8	34	8	33	56	1	0
<b>West North Central States:</b>								
Minnesota.....	12	1			13	33	6	0
Iowa.....	7	9	4		1	48	1	3
Missouri.....	57	78	34	56	14	49	1	2
North Dakota.....	2	1				51	0	0
South Dakota.....	1				1	13	1	0
Nebraska.....	7	4			1	4	0	0
Kansas.....	8	19		3	3	30	0	0
<b>South Atlantic States:</b>								
Delaware.....					9		1	0
Maryland <sup>1</sup> .....	9	13	2	8	2	10	6	0
District of Columbia.....	20	10		2	1	1	3	0
Virginia.....	72	89			3	22	1	1
West Virginia.....	68	81	15	14	11	34	0	1
North Carolina.....	78	133	4	6	2	20	0	0
South Carolina.....	13	10	166	132	1	1	0	0
Georgia <sup>1</sup> .....	30	32					0	0
Florida.....	12	11	2		3	1	1	0
<b>East South Central States:</b>								
Kentucky.....	57	75	10		15	27	0	0
Tennessee.....	55	49	19	11		8	3	1
Alabama <sup>1</sup> .....	44	92	10	22	4	12	0	0
Mississippi.....	16	20					0	2
<b>West South Central States:</b>								
Arkansas.....	29	14	17	9		1	0	0
Louisiana.....	14	22	3	3	3	1	0	1
Oklahoma <sup>1</sup> .....	11	10	32	26		1	4	0
Texas <sup>1</sup> .....	63	44	64	90	1	23	0	1

See footnotes at end of table.

*Cases of certain communicable diseases reported by telegraph by State health officers  
for weeks ended Oct. 12, 1935, and Oct. 13, 1934—Continued*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934
<b>Mountain States:</b>								
Montana.....	2	1	21	2	16	32	1	0
Idaho.....	1	2	4	3	3		0	0
Wyoming.....	3	2			13	1	0	0
Colorado.....	15	11			11	18	1	0
New Mexico.....	8	1	2		2	27	0	0
Arizona.....	1	2	31	1	1	2	1	0
Utah.....					3	2	0	0
<b>Pacific States:</b>								
Washington.....		1			50	67	0	1
Oregon.....			13	28	95	7	0	0
California.....	47	31	20	26	123	36	1	0
<b>Total.....</b>	<b>1099</b>	<b>1, 174</b>	<b>595</b>	<b>514</b>	<b>723</b>	<b>1, 031</b>	<b>61</b>	<b>24</b>
<b>First 41 weeks of year.....</b>	<b>24698</b>	<b>26, 739</b>	<b>107576</b>	<b>52, 913</b>	<b>700371</b>	<b>674, 351</b>	<b>4655</b>	<b>1, 853</b>

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934
<b>New England States:</b>								
Maine.....	13	2	15	18	0	0	0	7
New Hampshire.....	3	0	1	25	0	0	0	1
Vermont.....	6	0	6	6	0	0	1	0
Massachusetts.....	52	4	98	84	0	0	4	5
Rhode Island.....	13	0	9	4	0	0	0	0
Connecticut.....	18	0	24	16	0	0	1	0
<b>Middle Atlantic States:</b>								
New York.....	71	11	219	179	0	0	12	15
New Jersey.....	24	0	46	45	0	0	7	8
Pennsylvania.....	1	8	152	197	0	0	27	36
<b>East North Central States:</b>								
Ohio.....	5	26	210	318	1	0	27	23
Indiana.....	4	2	101	81	0	1	11	0
Illinois.....	16	11	381	282	1	0	24	44
Michigan.....	29	21	90	106	0	0	7	11
Wisconsin.....	0	7	189	287	11	8	2	6
<b>West North Central States:</b>								
Minnesota.....	3	9	158	49	3	14	2	1
Iowa.....	2	2	49	44	10	1	11	20
Missouri.....	1	3	77	101	0	0	15	22
North Dakota.....	0	1	26	45	0	1	0	2
South Dakota.....	2	3	13		1	1	0	0
Nebraska.....	1	1	16	18	3	0	2	0
Kansas.....	2	3	61	62	1	0	4	10
<b>South Atlantic States:</b>								
Delaware.....	0	0	7	5	0	0	2	4
Maryland.....	6	0	58	61	0	0	18	16
District of Columbia.....	4	0	11	17	0	0	3	2
Virginia.....	1	1	59	101	0	0	16	11
West Virginia.....	0	4	99	117	0	0	17	33
North Carolina.....	9	2	59	109	1	0	20	6
South Carolina.....	0	0	14	6	0	0	14	1
Georgia.....	3	2	31	17	1	0	8	18
Florida.....	0	0	1	5	0	0	1	0
<b>East South Central States:</b>								
Kentucky.....	11	5	104	84	0	3	34	29
Tennessee.....	1	4	106	56	0	1	24	12
Alabama.....	1	1	16	23	0	0	3	16
Mississippi.....	2	1	23	15	0	0	6	5
<b>West South Central States:</b>								
Arkansas.....	0	0	16	9	0	1	8	5
Louisiana.....	4	0	11	13	0	0	13	13
Oklahoma.....	0	0	19	6	1	0	12	9
Texas.....	2	8	37	20	0	2	21	28

See footnotes at end of table.

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Oct. 12, 1935, and Oct. 13, 1934—Continued*

Division and State	Polio-myelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934	Week ended Oct. 12, 1935	Week ended Oct. 13, 1934
<b>Mountain States:</b>								
Montana.....	0	5	39	19	0	0	5	6
Idaho.....	0	1	21	1	0	0	5	1
Wyoming.....	0	0	21	7	9	0	0	3
Colorado.....	1	0	59	45	0	0	9	11
New Mexico.....	0	0	9	13	0	0	12	5
Arizona.....	0	4	8	23	0	0	2	2
Utah.....	1	0	36	11	0	0	1	1
<b>Pacific States:</b>								
Washington.....	0	39	33	42	5	28	8	4
Oregon.....	1	7	39	35	0	2	2	6
California.....	26	42	140	142	0	0	14	13
<b>Total.....</b>	<b>339</b>	<b>240</b>	<b>3017</b>	<b>2,967</b>	<b>48</b>	<b>63</b>	<b>435</b>	<b>471</b>
First 41 weeks of year.....	9292	6,294	194715	162,504	5565	3,961	14509	17,023

<sup>1</sup> New York City only.

<sup>2</sup> Week ended earlier than Saturday.

<sup>3</sup> Typhus fever, week ended October 12, 1935, 21 cases, as follows: Georgia, 15; Alabama, 4; Texas, 2.

<sup>4</sup> Exclusive of Oklahoma City and Tulsa.

### SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week:

State	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Mala- ria	Mea- sles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<b>September 1935</b>										
Arkansas.....	1	47	35	244	7	34	4	40	4	31
Georgia.....	1	133	58	507	2	16	3	53	0	101
Indiana.....	8	177	93	5	19	-----	10	229	1	61
Massachusetts.....	7	19	-----	2	51	2	538	218	0	14
Nebraska.....	1	24	1	-----	10	-----	2	63	10	3
New Mexico.....	-----	24	5	26	2	2	1	18	0	65
Vermont.....	-----	-----	-----	-----	35	-----	27	14	0	4
Wyoming.....	-----	1	-----	-----	27	-----	1	21	5	2

September 1935		September 1935—Continued		September 1935—Continued	
Anthrax:.....	Cases	Hookworm disease:.....	Cases	Septic sore throat—Con. ....	Cases
Georgia.....	2	Georgia.....	270	New Mexico.....	1
Chicken pox:.....		Lead poisoning:.....		Wyoming.....	2
Arkansas.....	5	Massachusetts.....	2	Tetanus:.....	
Georgia.....	2	Mumps:.....		Massachusetts.....	3
Indiana.....	33	Arkansas.....	42	Trachoma:.....	
Massachusetts.....	99	Georgia.....	37	Massachusetts.....	3
Nebraska.....	6	Indiana.....	17	Trichinosis:.....	
New Mexico.....	11	Massachusetts.....	215	Georgia.....	1
Vermont.....	31	Nebraska.....	9	Massachusetts.....	3
Wyoming.....	24	New Mexico.....	34	Tularaemia:.....	
Conjunctivitis:.....		Vermont.....	21	Georgia.....	1
Georgia.....	1	Wyoming.....	1	Typhus fever:.....	
New Mexico.....	2	Ophthalmia neonatorum:.....		Georgia.....	81
Dengue:.....		Massachusetts.....	76	Undulant fever:.....	
Georgia.....	8	New Mexico.....	1	Georgia.....	10
Dysentery:.....		Paratyphoid fever:.....		Massachusetts.....	3
Georgia (amoebic).....	8	Georgia.....	3	Vermont.....	1
Georgia (bacillary).....	4	New Mexico.....	2	Vincent's infection:.....	
Massachusetts (amoebic).....	2	Puerperal septicemia:.....		Wyoming.....	1
Massachusetts (bacillary).....	7	New Mexico.....	1	Whooping cough:.....	
New Mexico (amoebic).....	5	Rabies in animals:.....		Arkansas.....	29
New Mexico (bacillary).....	1	Indiana.....	57	Georgia.....	27
New Mexico (unspeci- fied).....	13	Massachusetts.....	5	Indiana.....	123
Epidemic encephalitis:.....		Screw-worm infection:.....		Massachusetts.....	254
Massachusetts.....	2	Georgia.....	2	Nebraska.....	15
New Mexico.....	1	Septic sore throat:.....		New Mexico.....	39
German measles:.....		Georgia.....	16	Vermont.....	56
Massachusetts.....	46	Massachusetts.....	11	Wyoming.....	40
New Mexico.....	1				
Vermont.....	10				



## CASES OF VENEREAL DISEASES REPORTED FOR AUGUST 1935

These reports are published monthly for the information of health officers in order to furnish current data as to the prevalence of the venereal diseases. The figures are taken from reports received from State and city health officers. They are preliminary and are therefore subject to correction. It is hoped that the publication of these reports will stimulate more complete reporting of these diseases.

*Reports from States*

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Alabama.....	858	3.17	470	1.73
Arizona.....	39	.85	134	2.93
Arkansas.....	506	2.70	288	1.54
California.....	1,405	2.28	1,531	2.49
Colorado <sup>1</sup> .....				
Connecticut.....	192	1.16	131	.79
Delaware <sup>1</sup> .....	48	1.98	23	.95
District of Columbia.....	178	3.58	162	3.26
Florida.....	278	1.77	80	.51
Georgia.....	1,289	4.43	692	2.38
Idaho.....	0	0	0	0
Illinois.....	1,165	1.48	1,240	1.57
Indiana.....	257	.78	272	.82
Iowa <sup>1</sup> .....	105	.42	176	.71
Kansas.....	103	.54	105	.55
Kentucky.....	203	.76	367	1.38
Louisiana <sup>1</sup> .....	180	.83	122	.56
Maine.....	50	.62	54	.67
Maryland.....	823	4.93	281	1.68
Massachusetts <sup>1</sup> .....				
Michigan.....	496	.97	632	1.24
Minnesota.....	409	1.57	422	1.62
Mississippi.....	1,258	6.12	2,071	10.07
Missouri <sup>1</sup> .....				
Montana <sup>1</sup> .....	46	.86	65	1.21
Nebraska.....	29	.21	67	.48
Nevada <sup>1</sup> .....				
New Hampshire.....	27	.57	33	.70
New Jersey.....	691	1.63	350	.83
New Mexico <sup>1</sup> .....	32	.73	49	1.12
New York <sup>1</sup> .....	3,156	2.42	1,003	.77
North Carolina.....	1,429	4.33	465	1.41
North Dakota.....	20	.29	82	1.19
Ohio <sup>1</sup> .....	499	.73	223	.33
Oklahoma <sup>1</sup> .....	184	.74	189	.76
Oregon.....	75	.76	151	1.63
Pennsylvania.....	251	.26	238	.24
Rhode Island.....	110	1.56	82	1.16
South Carolina <sup>1</sup> .....	317	1.81	488	2.79
South Dakota.....	5	.07	45	.64
Tennessee.....	1,077	4.02	569	2.13
Texas.....	303	.50	224	.37
Utah <sup>1</sup> .....				
Vermont.....	23	.64	48	1.33
Virginia.....	561	2.29	371	1.52
Washington.....	133	.83	168	1.04
West Virginia.....	325	1.82	145	.81
Wisconsin <sup>1</sup> .....	22	.07	181	.60
Wyoming <sup>1</sup> .....				
Total.....	19,157	1.64	14,489	1.24

<sup>1</sup> Not reporting.

<sup>2</sup> Incomplete.

<sup>3</sup> Has been reporting regularly but no report received for current month.

<sup>4</sup> Only cases of syphilis in the infectious stage are reported.

## Reports from cities of 200,000 population or over

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Akron, Ohio.....	15	0.55	19	0.70
Atlanta, Ga.....	188	6.55	123	4.46
Baltimore, Md.....	520	6.30	181	2.19
Birmingham, Ala.....	127	4.50	78	2.76
Boston, Mass.....	192	2.43	226	2.86
Buffalo, N. Y.....	199	3.36	108	1.82
Chicago, Ill.....	675	1.89	876	2.46
Cincinnati, Ohio.....	67	1.44	57	1.22
Cleveland, Ohio.....	213	2.29	111	1.19
Columbus, Ohio.....	8	.26	0	0
Dallas, Tex.....	107	3.69	37	1.28
Dayton, Ohio.....	6	.29	0	0
Denver, Colo.....	15	.51	3	.10
Detroit, Mich.....	196	1.13	365	2.10
Houston, Tex. <sup>1</sup> .....	163	4.87	39	1.16
Indianapolis, Ind.....	80	2.12	45	1.19
Jersey City, N. J. <sup>2</sup> .....				
Kansas City, Mo.....	41	.97	13	.31
Los Angeles, Calif. <sup>3</sup> .....				
Louisville, Ky.....	145	4.48	336	10.37
Memphis, Tenn.....	186	6.97	59	2.21
Milwaukee, Wis.....	4	.07	16	.26
Minneapolis, Minn.....	96	1.97	150	3.03
Newark, N. J. <sup>4</sup> .....				
New Orleans, La. <sup>1</sup> .....				
New York, N. Y.....	3,146	4.31	1,003	1.37
Oakland, Calif.....	37	1.22	50	1.65
Omaha, Nebr.....	13	.59	10	.45
Philadelphia, Pa.....	319	1.61	73	.37
Pittsburgh, Pa.....	51	.75	35	.51
Portland, Oreg.....	52	1.66	104	3.31
Providence, R. I.....	52	2.01	49	1.89
Rochester, N. Y.....	48	1.42	7	.21
St. Louis, Mo.....	596	7.13	230	2.75
St. Paul, Minn.....	38	1.35	42	1.49
San Antonio, Tex. <sup>1</sup> .....				
San Francisco, Calif.....	151	2.25	164	2.45
Seattle, Wash.....	83	2.19	102	2.69
Syracuse, N. Y.....	19	.87	40	1.84
Toledo, Ohio.....	53	1.74	40	1.31
Washington, D. C. <sup>7</sup> .....	178	3.58	162	3.28

<sup>1</sup> Not reporting.<sup>2</sup> Data for Jefferson Davis (city-county) hospital only; physicians of Houston are not compelled to report venereal diseases.<sup>3</sup> No report for this month.<sup>7</sup> Reported by Social Hygiene Clinic.

## WEEKLY REPORT FROM CITIES

City reports for week ended Oct. 5, 1935

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

State and city	Diph- theria cases	Influenza		Meas- les cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
<b>Maine:</b>											
Portland	0	1	0	0	2	2	0	0	0	9	22
<b>New Hampshire:</b>											
Concord	1		0	0	0	0	0	0	0	0	11
Manchester	0		0	0	0	0	0	1	0	0	3
Nashua	0		0	0		0			0	0	
<b>Vermont:</b>											
Barre	0		0	0	0	0	0	0	0	0	0
Burlington	0		0	0	0	0	0	0	0	0	4
Rutland	1		0	0	0	1	0	0	0	3	2
<b>Massachusetts:</b>											
Boston	0		0	4	17	14	0	4	0	11	184
Fall River	0		0	0	0	0	0	1	0	2	24
Springfield	0		0	0	0	6	0	1	0	2	29
Worcester	0		0	0	2	18	0	3	3	0	35
<b>Rhode Island:</b>											
Pawtucket	0		0	0	0	0	0	0	0	0	12
Providence	2		0	162	2	3	0	1	0	15	61
<b>Connecticut:</b>											
Bridgeport	1	1	0	0	0	4	0	1	0	0	28
Hartford	0		0	0	2	3	0	0	0	3	38
New Haven	0		0	0	0	2	0	2	0	8	29
<b>New York:</b>											
Buffalo	0		1	5	10	17	0	4	0	15	124
New York	28	7	2	22	79	63	0	84	11	115	1,231
Rochester	0		0	0	3	4	0	1	0	6	53
Syracuse	0		0	0	6	4	0	1	0	12	48
<b>New Jersey:</b>											
Camden	0		0	0	4	4	0	2	5	1	31
Newark	0	3	0	1	2	6	0	7	0	21	85
Trenton	0		0	1	0	3	0	3	0	2	30
<b>Pennsylvania:</b>											
Philadelphia	4	2	2	7	20	45	0	19	13	47	404
Pittsburgh	4	1	1	1	14	19	0	5	1	15	127
Reading	0		0	0	2	0	0	0	0	0	18
Scranton	0			0		3	0		0	0	
<b>Ohio:</b>											
Cincinnati	12		1	1	4	10	0	6	0	6	124
Cleveland	0	18	0	4	11	9	0	15	2	51	160
Columbus	9		0	2	3	15	0	2	1	1	84
Toledo	0	2	2	1	3	4	0	5	0	3	73
<b>Indiana:</b>											
Anderson	1		0	0	0	0	0	0	0	0	8
Fort Wayne	11		0	0	2	7	0	0	0	1	27
Indianapolis	5		0	0	8	16	0	2	0	3	100
South Bend	1		1	0	2	2	0	0	0	2	18
Terre Haute	0		0	0	0	1	0	0	0	0	30
<b>Illinois:</b>											
Alton	2		0	0	1	3	0	0	0	0	10
Chicago	9	6	0	7	23	80	0	34	3	97	601
Elgin	0		0	0	1	0	0	0	0	0	8
Moline	0		0	0	0	0	0	0	0	0	12
<b>Michigan:</b>											
Detroit	14	5	0	4	12	14	0	11	3	73	207
Flint	1		0	0	0	5	0	0	1	0	25
Grand Rapids	0		0	2	2	6	0	1	0	2	32
<b>Wisconsin:</b>											
Kenosha	0		0	1	0	7	0	0	0	2	9
Milwaukee	0		0	0	2	31	0	3	0	56	
Racine	0		0	0	0	16	0	0	0	4	13
Superior	0		0	0	1	0	0	0	0	0	3
<b>Minnesota:</b>											
Duluth	0		0	0	0	2	0	1	0	0	22
Minneapolis	8		0	2	10	33	0	1	0	7	95
St. Paul	0	1	1	0	5	8	0	4	0	7	73
<b>Iowa:</b>											
Cedar Rapids	0		0	0	0	0	0	0	0	0	0
Davenport	0			0		2	0		0	0	
Des Moines	4			0		1	0		0	0	33
Sioux City	0			0		3	0		0	3	
Waterloo	2			0		4	0		0	0	

1 Including delayed reports.

## City reports for week ended Oct. 5, 1935—Continued

State and city	Diph- theria cases	Influenza		Meas- les cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Missouri:											
Kansas City.....	4	-----	0	0	9	2	0	6	1	0	75
St. Joseph.....	6	-----	0	0	1	4	0	0	0	0	20
St. Louis.....	9	2	-----	0	4	14	0	3	2	4	227
North Dakota:											
Fargo.....	2	-----	0	1	0	3	0	1	0	1	7
Grand Forks.....	0	-----	2	-----	1	0	0	0	0	0	-----
Minot.....	0	-----	0	0	0	0	0	0	0	0	8
South Dakota:											
Aberdeen.....	0	-----	-----	0	-----	2	0	-----	0	0	-----
Nebraska:											
Omaha.....	2	-----	0	0	4	10	0	1	0	0	53
Kansas:											
Lawrence.....	0	-----	0	0	1	0	0	0	0	0	2
Topeka.....	0	-----	0	0	0	1	0	0	0	2	8
Wichita.....	0	-----	0	1	2	6	0	1	1	0	21
Delaware:											
Wilmington.....	0	-----	0	0	3	0	0	2	0	0	18
Maryland:											
Baltimore.....	3	3	1	0	14	10	0	9	2	13	194
Cumberland.....	1	-----	0	0	0	1	0	0	1	0	7
Frederick.....	0	-----	0	0	0	0	0	1	0	0	5
Dist. of Columbia:											
Washington.....	10	-----	0	0	5	6	0	13	2	3	138
Virginia:											
Lynchburg.....	4	-----	0	0	0	1	0	0	0	1	9
Norfolk.....	0	-----	0	0	2	0	0	2	0	1	36
Richmond.....	0	-----	0	0	1	2	0	1	1	0	43
Roanoke.....	6	-----	0	0	2	4	0	0	0	0	18
West Virginia:											
Charleston.....	4	-----	0	1	1	3	0	0	0	0	28
Huntington.....	7	-----	-----	0	-----	13	0	0	0	0	-----
Wheeling.....	0	-----	0	0	5	0	0	0	0	0	24
North Carolina:											
Gastonia.....	1	-----	0	0	0	1	0	0	0	0	4
Raleigh.....	0	-----	0	0	0	0	0	1	0	0	20
Wilmington.....	0	-----	0	0	0	0	0	0	0	1	13
Winston-Salem.....	2	-----	0	0	1	2	0	1	1	0	8
South Carolina:											
Charleston.....	0	7	0	0	1	0	0	2	2	0	18
Columbia.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Greenville.....	0	-----	0	0	2	0	0	0	1	0	26
Georgia:											
Atlanta.....	7	4	0	0	4	12	0	3	0	6	67
Brunswick.....	0	-----	0	0	1	0	0	0	0	0	4
Savannah.....	4	-----	0	0	4	3	0	2	0	2	33
Florida:											
Miami.....	0	-----	0	0	3	0	0	0	0	4	28
Tampa.....	6	-----	0	0	2	0	0	1	0	5	23
Kentucky:											
Ashland.....	4	-----	-----	0	-----	2	0	-----	1	0	-----
Covington.....	1	-----	0	0	1	4	0	1	0	0	3
Lexington.....	2	-----	0	0	2	1	0	2	0	0	18
Louisville.....	2	1	0	0	4	10	0	5	2	3	80
Tennessee:											
Knoxville.....	4	-----	0	0	0	3	0	1	1	1	26
Memphis.....	0	-----	0	0	4	1	0	3	4	4	74
Nashville.....	2	-----	0	1	3	2	0	1	1	0	43
Alabama:											
Birmingham.....	1	-----	0	0	3	3	0	10	3	0	53
Mobile.....	6	2	0	0	2	0	0	0	0	0	22
Montgomery.....	1	-----	-----	0	-----	0	0	-----	0	0	-----
Arkansas:											
Fort Smith.....	2	-----	-----	0	-----	0	0	-----	0	0	-----
Little Rock.....	0	-----	0	0	2	2	0	1	0	0	6
Louisiana:											
Lake Charles.....	0	-----	0	0	0	1	0	0	0	0	5
New Orleans.....	5	1	1	0	8	1	0	6	0	0	136
Shreveport.....	0	-----	0	0	5	2	0	0	0	0	27
Oklahoma:											
Oklahoma City.....	1	10	0	0	1	7	0	1	0	0	40
Texas:											
Dallas.....	7	1	1	0	4	4	0	2	0	1	51
Fort Worth.....	7	-----	0	0	3	6	0	0	1	1	30
Galveston.....	0	-----	0	0	1	0	0	0	0	0	6
Houston.....	7	-----	1	0	2	2	0	8	1	0	57
San Antonio.....	1	-----	0	0	4	2	0	6	1	0	85

## City reports for week ended Oct. 5, 1935—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Montana:											
Billings.....	0	-----	0	0	0	1	0	0	1	1	9
Great Falls.....	0	-----	0	0	0	5	0	0	0	3	3
Helena.....	0	-----	0	0	0	0	0	0	1	0	1
Missoula.....	0	-----	0	0	0	22	0	0	0	0	8
Idaho:											
Boise.....	0	-----	0	0	0	0	0	0	0	0	16
Colorado:											
Colorado Springs.....	0	-----	0	0	0	3	0	1	1	3	8
Denver.....	1	-----	0	2	8	7	0	7	3	9	84
Pueblo.....	0	-----	0	0	1	5	0	0	0	0	6
New Mexico:											
Albuquerque.....	2	-----	0	0	1	1	0	2	1	0	14
Utah:											
Salt Lake City.....	0	-----	0	0	1	17	0	0	2	12	36
Nevada:											
Reno.....	0	-----	0	0	0	0	0	0	0	0	1
Washington:											
Seattle.....	0	-----	-----	0	12	5	0	4	1	1	-----
Spokane.....	0	-----	-----	2	4	2	0	0	0	3	29
Tacoma.....	0	-----	0	2	0	3	0	0	0	0	23
Oregon:											
Portland.....	0	2	1	1	1	13	0	4	0	0	80
Salem.....	0	-----	-----	0	-----	3	0	-----	0	1	-----
California:											
Los Angeles.....	7	12	0	12	11	31	0	15	12	14	251
Sacramento.....	2	-----	0	3	0	4	0	1	3	0	23
San Francisco.....	3	-----	0	19	3	5	0	8	0	19	140

State and city	Meningococcus meningitis		Polio-myelitis cases	State and city	Meningococcus meningitis		Polio-myelitis cases
	Cases	Deaths			Cases	Deaths	
Maine:				Missouri:			
Portland.....	0	0	1	Kansas City.....	1	0	0
Massachusetts:				St. Louis.....	1	0	0
Boston.....	2	1	38	Kansas:			
Fall River.....	0	0	6	Wichita.....	1	0	0
Springfield.....	1	1	0	Maryland:			
Rhode Island:				Baltimore.....	2	1	3
Providence.....	0	0	10	District of Columbia:			
Connecticut:				Washington.....	2	1	5
Bridgeport.....	0	0	4	Virginia:			
Hartford.....	0	0	2	Lynchburg.....	1	0	0
New Haven.....	0	0	2	Norfolk.....	0	0	1
New York:				South Carolina:			
New York.....	2	1	65	Charleston.....	0	0	1
Syracuse.....	0	0	3	Kentucky:			
New Jersey:				Louisville.....	0	0	3
Newark.....	0	0	3	Arkansas:			
Pennsylvania:				Little Rock.....	0	1	0
Philadelphia.....	1	1	4	Louisiana:			
Pittsburgh.....	0	0	1	Shreveport.....	0	1	0
Ohio:				Oklahoma:			
Columbus.....	0	0	1	Oklahoma City.....	0	0	1
Toledo.....	0	0	2	Texas:			
Illinois:				Dallas.....	0	1	0
Chicago.....	1	0	8	Colorado:			
Michigan:				Pueblo.....	1	0	0
Detroit.....	0	0	9	Oregon:			
Wisconsin:				Portland.....	2	1	0
Milwaukee.....	1	0	0	California:			
Minnesota:				Los Angeles.....	1	0	11
Minneapolis.....	0	0	2	Sacramento.....	0	0	3

*Epidemic encephalitis*.—Cases: Philadelphia, 1; Indianapolis, 1; Chicago, 1; St. Paul 1.

*Pellagra*.—Cases: Alton, Ill., 1; Birmingham, 1.

*Typhus fever*.—Cases: Charleston, S. C., 1; Atlanta, 1.

## FOREIGN AND INSULAR

### CUBA

*Habana—Communicable diseases—4 weeks ended September 28, 1935.*—During the 4 weeks ended September 28, 1935, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria.....	4	1	Tuberculosis.....	36	7
Malaria.....	162		Typhoid fever.....	166	3

<sup>1</sup> Includes imported cases.

*Provinces—Notifiable diseases—4 weeks ended September 21, 1935.*—During the 4 weeks ended September 21, 1935, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer.....	1	2		7	1		11
Diphtheria.....		1		2		1	4
Hookworm disease.....				3			3
Leprosy.....		1		1		14	16
Malaria.....	887	45	12	752	562	571	2,829
Measles.....		2	2	3	4		11
Poliomyelitis.....				4	3	1	8
Tetanus, infantile.....				1			1
Tuberculosis.....	3	30	18	36	25	38	150
Typhoid fever.....	4	53	14	52	67	11	201

### FRANCE

*Marseille—Plague.*—A report dated October 15, 1935, states that 2 cases of bubonic plague were reported at Marseille from the French steamship *Ipanema* on the regular run to Philippeville and Bone. Several plague-infected rats were reported found on board the vessel.

### JAMAICA

*Communicable diseases—4 weeks ended October 5, 1935.*—During the 4 weeks ended October 5, 1935, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Chicken pox.....	1	9	Puerperal fever.....		1
Dysentery.....	32	4	Scarlet fever.....	1	1
Erysipelas.....		1	Tuberculosis.....	45	101
Leprosy.....		2	Typhoid fever.....	16	99

# CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Hygiene, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following table must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

## CHOLERA

[C indicates cases; D, deaths; P, present]

Place	Feb. 24- Mar. 30, 1935	Mar. 31- Apr. 27, 1935	Apr. 28- May 25, 1935	May 26- June 29, 1935	Week ended—													
					July 1935					August 1935					September 1935			
					6	13	20	27	3	10	17	24	31	7	14	21	28	
Ceylon:																		
Colombo.....	5																	
China:	3																	
Amoy.....																		
Canton.....			1															
Swatow.....			2															
India:																		
Assam.....	20, 283	23, 104	19, 176	24, 379	4, 362	5, 378	7, 032	8, 722	9, 181	10, 691	10, 899							
	10, 234	12, 660	10, 447	13, 840	2, 288	2, 924	3, 751	4, 323	5, 290	5, 768	5, 625							
	330	2, 038	2, 405	1, 212	92	75	57	26	32	261	562	440	411	223	126	120	111	
	169	1, 204	1, 465	666	47	53	26	20	12	121	241	263	234	116	66	62	42	
Basseln.....	4	21	22	4														
Bombay Presidency.....	2	14	20	1														
	234	146	232	216	130	209	353	636	1, 039	1, 145	1, 390	1, 171	1, 491					
Bombay.....	98	66	107	84	54	94	128	252	434	524	589	479	661					
Calcutta.....	6	1				4	1	2	2	51	36	39	34	30	36	36	17	
Chittagong.....	838	782	825	704	191	164	94	73	56	51	1	1	1	1	2	1	8	
Cochin.....	14	19	34	29	2	1	3											
Madras Presidency.....																		
	3, 738	2, 432	1, 468	2, 553	542	596	749	1, 085	1, 652	1, 536								
	1, 927	1, 215	782	1, 162	222	271	335	456	707	606								
	3	2		15	4	12	23	45	63	23	12	18	21	9	8	6	8	
	1			5	2		6	15	23	13	5	7	9	5	2	6	2	
Madras.....	8	6	1	18					1									
Moulmein.....																		
Nepapatam.....	14	10																
Northwest Frontier Province.....																		
Punjab.....																		
Rangoon.....			5	142	38	96	90	28	10	86	142	155	123	176	73	33	52	
Tuticorin.....	9	16	11	6		2	11											
Vizagapatam.....	1	37	6															
India (French):																		
Chanderanagar.....																		
Karikal.....	17	62	15	7		3		24	12	4								
Pondichery.....	17	1	31	6				2	5	1	6	3						
	9	12																

## Indo-China (see also table below):

		April 1935				May 1935				June 1935				July 1935			
		1-10	11-20	21-30		1-10	11-20	21-31		1-10	11-20	21-30		1-10	11-20	21-31	
Pnom-Penh.....	1	1	1							1							
Varela.....		1	1														
Philippine Islands: Risa! Province.....		1															
Siam:																	
Ayudhaya Province.....																	
Bangkok.....																	
Belurpur Province.....	1																
Kanchanapuri Province <sup>1</sup> .....																	
Nagara Rajsimha-Roy Ech.....	13																
Nondpur Province.....	2																
Rajpur Province.....																	
Sinduprakar Province.....																	
Sindusagara Province.....																	
Sindusongram Province.....																	
On vessels:																	
S. S. <i>Freemantle</i> at Colombo.....	1																
S. S. <i>Pasha</i> at Rangoon from Moulineln.....	1																
S. S. <i>Khandada</i> at Rangoon.....	1																
S. S. <i>Jawa</i> at Moulineln from Mergui.....	1																
S. S. <i>Karoo</i> at Rangoon.....	1																
S. S. <i>Ethiopia</i> at Madras from Rangoon.....		1															
S. S. <i>Ellenga</i> at Rangoon.....		1															
S. S. <i>Bodnant</i> at Calcutta.....																	
S. S. <i>Baron Napier</i> at Calcutta.....																	
S. S. <i>Barjora</i> at Calcutta.....																	
S. S. <i>Refugia</i> at Penang.....																	
S. S. <i>Ranjit</i> at Calcutta.....																	
S. S. <i>Sandhia</i> at Rangoon from Calcutta.....																	
S. S. <i>Kuala</i> at Penang from Moulineln.....																	
S. S. <i>Cape St. Francis</i> at Rangoon from Calcutta.....																	

## Place

## Indo-China (French) (see also table above):

Cambodia <sup>1</sup> .....	1	1	1	2	17	8	1			8	9						
Cochin-China <sup>1</sup> .....	1	1	1	2	12	5				3	6	6					
	1	1	1	1	3					7	5	11		2			2
	1	1	1	1	2		4			7	3	3		2			2

<sup>1</sup> Imported.<sup>2</sup> For 2 weeks.<sup>3</sup> During the period April 20 to July 9, 1935, 98 cases of cholera were reported in Kanchanapuri Province, Siam.  
<sup>4</sup> Suspected.  
<sup>5</sup> Reports incomplete.



## CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE<sup>1</sup>

[C indicates cases; D, deaths; P, present]

Place	Feb. 24– Mar. 31– 1935	Mar. 31– Apr. 27– 1935	Apr. 28– May 26– 1935	May 28–June 29, 1935	Week ended—											
					July 1935			August 1935						September 1935		
					6	13	20	27	3	10	17	24	31	7	14	21
Argentina (see also table below):																
Pampa Territory—																
Leventine, <sup>3</sup>			1													
Victoria.....			1													
San Luis, <sup>2</sup>																
Azores. (See table below.)																
Bechuanaland Protectorate.....																
Belgian Congo.....			P													
Belgian Congo.....							2									
Bolivia. (See table below.)																
Brazil, <sup>4</sup>	1					1										
British East Africa:																
Kenya.....	2		11	4	2	2	3	14	5	6	0	1	8	2		
Tanganyika.....	1															
Uganda.....	27	85	135	340	64	59	59	58	51	38	60	40	42	36		
Ceylon: Colombia.....	27	90	134	324	62	50	53	50	51	36	58	40	41	33		
Ceylon: Colombia.....	4	2	4	3		2	1	2	1		2		1		6	3
Ceylon: Colombo.....	4	1	4	3		2	1	2	1		2		1		4	2
Ceylon: Colombo.....	4	14				1	1	1					1		4	2
Plague-infected rats.																
China (see also table below):																
Amoy.....	1		1													
Fukiang Province—Chuanchow, <sup>5</sup>																
Manchuria, <sup>7</sup>																
Dutch East Indies: West Java.....	1,634	678	656	548												
Dutch East Indies: West Java.....	1,633	678	651	546												
Ecuador (see also table below):																
Guayaquil.....		1								1			1	4	1	2
Guayaquil.....		1												2	2	1
Plague-infected rats.....																
Loja Province—Celica.....							1									
Egypt:																
Alexandria.....			1													
Plague-infected rats.....	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Asyut.....	3	4	12	3	2							1				



**PLAGUE—Continued**

**Week ended—**

[illegible]

Place	March 1935	April 1935	May 1935	June 1935	July 1935	August 1935	Place	March 1935	April 1935	May 1935	June 1935	July 1935	August 1935
Argentina (see also table above):							Peru—Continued						
Jujuy Province.....	C				1		Libertad Department.....	5		3		2	5
Pampa Territory—Victoria.....	C			2			Lima Department.....	5	12	6	4	2	5
Santa Fe.....	C	1					Cuzco.....	2			1		2
Santiago de Estero Province.....	C						Culicoides.....	2					
Frias.....	C						Plague-infected rats.....		P				
Azores.....	C						Lima.....	2	9	6			5
Bolivia.....	C	4				3	Dakota.....	1	7	4	1	1	2
China: Kwangchowan.....	C					114	Plague-infected rats.....		P				
Ecuador: Loja Province.....	C			7			Senegal.....						
Indo-China (see also table above):	C	17	13	4			Baoi <sup>10</sup> .....	2	5	10	19	25	16
Cochin-China.....	C						Dakar <sup>11</sup> .....	2	4		13	15	2
Naothao Island.....	C	1	2	1	9	1	Lougga <sup>12</sup> .....			1			1
Madagascar (central region).....	C	20	18				Rufisque <sup>13</sup> .....				8	2	4
Peru.....	C	211	200	128	85	112	Tientsin <sup>14</sup> .....		17	10	20	17	22
Lambayeque Department.....	C	263	199	124	92	102	Tivouane <sup>15</sup> .....		3	19	48	42	46
	C	14	13	10	4	4	Southwest Africa: Ovamboland.....	29	5	30	48	13 24	
	C		1	1						13 34			

<sup>9</sup> Plague-infected wood rat.

<sup>10</sup> Includes 1 suspected plague-infected squirrel.

<sup>11</sup> Suspected.

<sup>12</sup> Incomplete reports.

<sup>13</sup> For 2 months.

[illegible]



[C indicates cases; D, deaths; P, present]

[illegible]





## CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

## SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place	March 1935	April 1935	May 1935	June 1935	July 1935	August 1935	Place	March 1935	April 1935	May 1935	June 1935	July 1935	August 1935
Belgian Congo.....	95	151	165	108	197	30	Mexico (see also table above)—Con.						
Bolivia.....	42	33	33	44	47	30	Mexico State.....				1	1	1
Chosen.....	178	211	157	102			Mexico D. F.....				140	54	54
Dahomey.....	16						Mexico city.....	134	125		118	41	41
Finland.....							Morelos State.....				7		
France.....	78	8	15	57	60	1	Nuevo Leon State.....				2		
Gustamala.....	1						Oaxaca State.....	3	5				
Indo-China (see also table above).....	601	552	303	210	203	135	Puebla State.....						
Japan (see also table above).....	53	92	53	57	31	30	Puebla.....	9	7		6	2	2
Mexico (see also table above):							Queretaro State.....				5	5	5
Aguscalientes State—							San Luis Potosi State.....					3	3
Aguscalientes.....	19	8		3	3		San Luis Potosi.....			13	12	5	5
Campeche State.....				2	1		Morocco.....	3	8				
Chihuahua State.....				4			Mozambique.....	4	3				
Chihuahua.....	16			3			Niger Territory.....		246				
Guatemala State.....							Nyasaland.....						
Leon.....							Peru.....	26	12	1	37	35	35
Hidalgo State.....							Portugal (see also table above).....	16	15	28	3	10	10
Jalisco State.....		7					Salvador.....	43	25	41	70	38	38
Jalisco State.....	1			13	2		Turkey.....	2	1	5	5	2	2
Quincy State.....				10	10		Union of Soviet Socialist Republics.....	28	1	13	30	35	35
Lower California.....				5	3			284	144	255		9	9

## TYPHUS FEVER

Place	Feb. 24- Mar. 30, 1935	Mar. 31-Apr. 25, 1935	Apr. 26- May 25, 1935	Week ended—													
				June 1935				July 1935				August 1935				September 1935	
				1	8	15	22	29	6	13	20	27	3	10	17	24	31
Algeria:																	
Algiers Department.....	12	18	38	4	28	11	5	11	2				1				
Algiers.....	2	2		1													
Constantine Department.....	58	84	23	18	37	27	17	6	8	5		1					
Constantine.....	4	3	2	8													
Philippeville.....					1	1	2	1	1								
Oran Department.....	11	3	2	1	1	1	2	1	15								
Southern Territories.....	11	3	20														
Australia: Queensland.....	1							1	1								
Belgian Congo.....																	
Bolivia. (See table below.).....																	
British East Africa: Uganda.....	1	2															
Bulgaria.....	533	333	414														
Chile.....	8	28	42	142			273	80									
Conception.....				118			14	16									
Iquique.....																	
Santiago.....	46	207	215				149	40	1		2	2	1	3		2	7
Valparaiso.....	5	3	5														
China:																	
Canton.....			1														
Hankow.....	1				2												
Hankow.....							1		1					1			
Harbin.....		5	20	2													
Nanking.....	1		2														
Shanghai.....	3	1	1	1	1			1			1		2	1			
Tientsin.....			5	3													
Tsingtao.....		2			1		1										
Chosen. (See table below.).....																	
Czechoslovakia. (See table below.).....																	
Egypt:																	
Alexandria.....	7	21	20	2	2	3	1	2									
Aswan.....	24	9	41	1	1												
Asyut.....	11	1	1					1	1			1	1	1	1	1	2
Beheira.....	223	243	161	13	15	12	8	4	5	2	3	3					

1 For 2 weeks.

2 For 4 weeks.

3 For the week ended Mar. 9, 1935, 11 cases of typhus fever were reported at San Jose nitrate camp about 42 miles from Iquique, Chile.

4 A report dated June 25, 1935, states that about 400 case of typhus fever occurred at Harbin, Manchuria, China.

[C indicates cases; D, deaths; P, present]

[illegible]

	20	112	77	19	19	16	16	16	14	24	16	8	10	5	1	2	1	1
Morocco.....	C																	1
Palestine.....																		6
Haifa.....	C	1	2	3	3				2		1				2	1	4	
Jaffa.....	C	1	1	5														
Panama Canal Zone. (See table below.)	D									1								
Paraguay: Amunon.....																		
Peru.....	C	580	597	127	104	80	67	67	48	52	41	34	33	30	22	24	21	14
Poland.....	D	46	33	42	5	4	4	5	1	3	5	1	2	4	1	2	1	1
Portugal. (See table below.)																		
Rumania. (See table below.)	C	6		3														
Saudi Arabia.....	C	1	3	2									1					
Straits Settlements: Singapore.....	C	6	17	11	6	1	4	2									1	2
Tanzania.....	C																	
Tunis.....	C	3	32	9			1	2					1	15	15	9		3
Tunisia.....	C	106	225	158	34	25	11	30	15	34	25	16	17	15				12
Turkey. (See table below.)																		4
Union of South Africa. (See table below.)																		
Union of Soviet Socialist Republics. (See table below.)																		
Yugoslavia. (See table below.)																		
On vessel S. S. <i>Neva Prince</i> at San Francisco.	C	1																

Place	March 1935	April 1935	May 1935	June 1935	July 1935	August 1935	Place	March 1935	April 1935	May 1935	June 1935	July 1935	August 1935
Bolivia.....	43	86	127	111	114	150	Mexico (see also table above)—Con.						
China: Manchuria—Harbin.....	C		45	25			Oaxaca State.....				1	5	
Chosen.....	C	28	26	135			Puebla State.....					7	
Czechoslovakia.....	C	179	254				Puebla.....				4	5	
Greece.....	C	52	13	11	33	3	Queretaro State.....				1		
Guatemala.....	C	1	3	2	5		San Luis Potosi State.....					11	
Latvia.....	C	30	35	7	22	24	San Luis Potosi.....				5	1	
Mexico (see also table above):	C	1	4	6	1		Vera Cruz State.....						
Agua Calientes State.....	C						Panama Canal Zone.....				1	1	
Agua Calientes.....	C			1			Peru.....				2	1	
Durango State.....	C				1		Portugal.....				96	19	
Guadalajara State.....	C			3	9		Rumania.....				2	3	
Leon.....	C			1	6		Turkey.....				574	300	
Hidalgo State.....	C						Union of South Africa.....				69	54	
Guadalajara.....	C						Cape Province.....				70	172	
Mexico State.....	C			3	1		Natal.....				5	2	
Mexico; D. F.....	C			95	178		Orange Free State.....				44	123	
Mexico City.....	C	63	59	91	170		Transvaal.....				83	37	
Michoacan State.....	D			1			Union of Soviet Socialist Republics.....				25	3	
							Yugoslavia.....				7, 198	49	
											131		31

\* Imported.

\* Includes 3 imported cases.

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued** **YELLOW FEVER**

[C indicates cases; D, deaths; P, present]

Place	Week ended—											
	June 1935				July 1935				August 1935			
	1	8	15	22	29	6	13	20	27	3	10	17
Bolivia: Santa Cruz Department—Chuchio. <sup>1</sup>												
Brazil:												
Goyaz State.....	4			2								
Maranhao State.....					1							
Mato Grosso State.....				2	9							
Minas Geraes State.....	6		4	6	2	2	4	2		1		
Para State <sup>2</sup> .....				6	2	2						
Sao Paulo State <sup>2</sup> .....				1	1							
Colombia:												
Intendencia of Meta—												
Acacias.....												
Restrepo.....								1				
Dahomey:												
Pate Kou.....	1											
Porto Novo.....								1				
French Equatorial Africa: Middle Congo—Pointe-												
noire.....												
Gold Coast: Cape Coast.....	2											
Ivory Coast:												
Bassam (near).....											1	
Gagnoa.....	1											
Sierra Leone: Freetown.....	2											
Togo:												
Agouave.....												
Kouma.....												
Sokode.....												

<sup>1</sup> During the month of June 1935, 1 case of yellow fever was reported at Chuchio, Santa Cruz Department, Bolivia.

<sup>2</sup> A report dated October 11, 1935, states that 1 case of yellow fever with 1 death was reported at Orizimina, Para State, and that yellow fever was present Aug. 21, 1935, at Ribelrao Preto, Sao Paulo State, Brazil.

<sup>3</sup> Suspected.

X